

then  $C$  is  $D$ , it explains what is meant by its *contrapositive* (if  $C$  is not  $D$ ,  $A$  is not  $B$ ), by its *converse* (if  $C$  is  $D$ ,  $A$  is  $B$ ), and by its *obverse* (if  $A$  is not  $B$ ,  $C$  is not  $D$ ). This last term we have heard strongly condemned; it was substituted (see Fifth Annual Report) for the more usual term *opposite* on the ground that, in logic, two opposite propositions cannot be true together. The terminology, however, to our mind, is a matter of no great consequence. For proving converse theorems frequent use is recommended in the work of a "Rule of Identity" here given, *i.e.* if there is but one  $A$  and but one  $B$ , then if  $A$  is  $B$ , it necessarily follows that  $B$  is  $A$ . (De Morgan's illustration is given in Wilson's Geometry.)

The *Straight Line* is the subject of Book i., and takes up five sections, Angles at a point, Triangles, Parallels and Parallelograms, Problems, and Loci. Here, in the definitions, we have two difficulties to meet, What is a *straight line*? what is an *angle*? The former is defined to be "such that any part will, however placed, lie wholly on any other part if its extremities are made to fall on that other part." The latter is stated to be a "simple concept incapable of definition;" its nature, however, is explained and illustrated in some detail. Parallel straight lines are defined as in Euclid, and Playfair's axiom is Axiom 5. Theorem 21 (Euc. i. 27) is proved as the contrapositive of Theorem 9 (Euc. i. 16); Theorem 22 (Euc. i. 29) by Rule of Identity, using Axiom 5. Book ii. treats of *Equality of Areas* (Theorems, Problems); Book iii. is on the *Circle*. Here a novelty is the treatment of Tangents in two sections, directly, then by the method of limits. Some, if not all, of De Morgan's suggestions ("Companion to British Almanac, 1849) on this subject have been adopted here. The Syllabus so far is not a novelty to many of our readers. Those possessed of Mr. Wilson's "Elementary Geometry" (3rd edition) will know that he has in the main, if not altogether, adopted the lines laid down in the Association's work, adding proofs in full, and much interesting illustrative matter. It hardly needs our saying that the method of superposition is freely used, and that alternative constructions are indicated.

We come now to Books iv. and v., which cover pretty much the same ground, except that in the former book we have the subject of proportion and its application treated in a thoroughly rigorous method, which is a simplification of Euclid's mode of treatment by multiples. In the latter book the same subjects are treated in a confessedly incomplete manner (for commensurables only) for the use of students whose capacities or time may be limited.

Similar figures, areas, loci, and problems complete Book v.

We shall conclude our notice by taking a few extracts from the report made by the committee appointed by the British Association "to consider the possibility of improving the methods of instruction in elementary geometry."

"It seems advisable that the requisite uniformity should be obtained by the publication of an authorised syllabus, indicating the order of the propositions, and in some cases the general character of the demonstrations, but leaving the choice of the text-book perfectly free to the teacher. . . . The committee recommend that the teaching of practical geometry should precede that of theoretical

geometry, in order that the mind of the learner may first be familiarised with the facts of the science, and afterwards led to see their connection. With this end the instruction in practical geometry should be directed as much to the verification of the theorems as to the solution of problems. . . . It appears that the principle of superposition might advantageously be employed with greater frequency in the demonstrations, and that an explicit recognition of it as an axiom of fundamental assumption should be made at the commencement. . . . The committee think also that it would be advisable to introduce explicitly certain definitions and principles of general logic, in order that the processes of simple conversion may not be confounded with geometrical methods."

The Syllabus now published is under the consideration of this body of distinguished mathematicians, who will report upon its merits and discuss the advisability of giving it the authority of the British Association. In the mean time it will be of considerable service if teachers will practically test it for themselves, and make known their views of its adaptation or want of adaptation for the end proposed. We may remark that Def. 38 (when a straight line intersects two other straight lines, it makes with them eight angles, which have received special names in relation to one another) is not quite correct, for the three lines may cointersect, and then six angles only are formed. Introduce the words "in two distinct points" between "straight lines," and "it makes."

#### ESKIMO TALES AND TRADITIONS

*Tales and Traditions of the Eskimo, with a sketch of their Habits, Religion, Language, and other Peculiarities.* By Dr. Henry Rink. Translated from the Danish by the Author. Edited by Dr. Robert Brown. With numerous Illustrations drawn and engraved by Eskimo. (Edinburgh and London: Blackwood and Sons, 1875.)

DR. Rink is probably the greatest living authority on all matters connected with the Greenland Eskimo. The high value of his contributions to our knowledge of Greenland and its people is universally admitted. The English reading public, and English ethnologists especially, will no doubt be grateful to him for having put his "Eskimo Tales and Traditions" into an English dress. The translation is perfectly idiomatic and altogether creditable to the author.

Not the least valuable portion of the work is the introduction, treating of the Eskimo themselves, in which, in a few short chapters, Dr. Rink presents a succinct and clear statement of all that is at present known of these interesting people. For his present purpose Dr. Rink divides the Eskimo into seven groups, groups which, we think, have quite marked enough distinctions to be regarded as convenient for most other purposes; they are as follows:—1. The East Greenlanders; 2. The West Greenlanders; 3. The Northernmost Greenlanders or Arctic Highlanders of Sir John Ross; 4. The Labrador Eskimo; 5. The Eskimo of the Middle Regions, from Baffin and Hudson Bays to Barter Island, near the Mackenzie River; 6. The Western Eskimo, from Barter Island to the west and south; and 7. The Asiatic Eskimo.

Anything like national or tribal union, however, seems untraceable, although at various periods, no doubt, the small communities of particular districts have united against a common enemy. The only communities which Dr. Rink can trace as anything like permanent are—1. The Family, the tie which unites the various members of which seems to be very strong; 2. The Housemates, or inhabitants of a house; for generally, except recently in some parts of Danish Greenland, one house sheltered two or more families which necessarily had many things in common, and many mutual duties and obligations; and 3. Place-fellows, or the inhabitants of the same hamlet or wintering-place, among whom communism in certain matters was distinctly recognised. Dr. Rink describes with some fulness the principal laws with regard to property and gain which are recognised as regulating the life of these three divisions of the various Eskimo groups.

Dr. Rink is strongly of opinion that the Eskimo are an indigenous American people, who have been pushed northwards by the intrusive Indian tribes, who are frequently referred to in the Tales contained in the volume, under the name of "Inlanders." In the frequent reference to conflicts and other dealings with the Inlanders Dr. Rink finds a confirmation of his theory, but we think it would equally well support a theory which maintained that the Eskimo themselves are the intruders. We are inclined to think that the theory broached by Mr. C. R. Markham in the R.G.S. "Papers on Arctic Geography and Ethnology" (1875) is quite as consistent with all the facts as Dr. Rink's, if not more so. Mr. Markham adduces very cogent reasons for believing that at no very remote period the Eskimo entered America from Asia by Behring Straits, driven to do so by the pushing northwards of the hordes from Central Asia. We doubt if these Tales and Traditions will help us much towards a knowledge of the origin and early history of the Eskimo. Indeed we doubt very much if we have yet data sufficient to authorise us to pronounce with anything like confidence on the subject.

The volume contains in all 150 Eskimo tales and traditions, some of which, however, are only fragments. They have been taken down from the recital of natives of South and North and East Greenland and of Labrador. A vast amount of material was thus collected, many of the tales being evidently variants of one original. This material Dr. Rink has redacted, "all the variations being most carefully examined and compared for the purpose" of com-

posing a text such as might agree best with the supposed original and most popular mode of telling the same story." For general purposes this method is, no doubt, quite satisfactory, but if these tales and traditions are to be of any service in enabling us to trace the origin of the Eskimo, the investigator should have before him all the supposed variations of the same original. By comparing these with each other, and with similar materials obtained



Woman with a Child in the amout or hood (after present fashion). Godthaab.

from the Western and Asiatic Eskimo, and with the neighbouring Siberian and Indian tribes, we should think it not unlikely that some valuable hints might be obtained as to the Eskimo migrations. No one is more competent than Dr. Rink for such a task, if undertaken without prepossession in favour of any hypothesis.

The tales are roughly divided into ancient and recent. The former may be regarded as the property of the whole



nation, and many of them Dr. Rink believes to be far older than a thousand years. Probably they originated when the Eskimo lived together before their migrations began, and while it is not unlikely that most of them took their rise in some actual incident, they have all evidently been much changed and elaborated by the introduction of the mythical and supernatural. The second class are limited to certain parts of the country, or even to certain people related to each other, "thus presenting the character of family records." But the recent, like the ancient, tales have all more or less of the mythical element in them, and indeed it is mainly from the tales and traditions as a whole that a knowledge of the elaborate and intricate Eskimo mythology has been obtained. The Eskimo have peopled the air, the earth, and the sea with a multitude of supernatural beings; they live as much in an unseen, but to them real and populous, world, as they do among the hard realities of their land and seas. It is very characteristic of them that they have placed their heaven where we have placed our "bad bit," as they call it in Galloway, under the earth, as being so much warmer than the ungenial sky, to which their wicked are condemned to freeze eternally. Of the comparatively modern tales a very few relate to the collision which took place in the fourteenth and fifteenth centuries between the Eskimo and the Icelandic colonists who had been settled in South Greenland since the eleventh century. One relates to two Eskimo who were taken to Europe by some of the early explorers of Greenland, and in both cases the mythical has been largely introduced, affording a good example of how these stories have grown, and showing that while a basis of truth exists in the older stories, the older they are the more difficult it would be to get at it.

While many of the stories are really interesting, there is a great deal of sameness about most of them. Many of them relate to feats of strength, which, formerly at least, seem to have been much admired by the Eskimo. Indeed, it is evident that it was no uncommon thing among them for men to go through a regular and well-devised system of "training" in order to develop muscle and endurance. A large number of them relate to the means adopted by the people to carry on the struggle for existence both against the stern powers of nature that everywhere meet them and against the cunning and competition of their fellows. The satisfaction of revenge and spite form the subject of many, as also the sacrifices made by friend for friend and by the members of a family for each other. Altogether they show the Eskimo to be on the whole gentle, hardy, hospitable, capable of strong attachment, but often capriciously revengeful and spiteful, even to his dearest friend. There is very little of the tender element of love in these stories, an element which figures so prominently in the folk-lore of most other nations. These stories also show that the Eskimo have the poetic temperament in a very fair degree, though most of them are artless enough, and many of them quite objectless and tame in the result. They very frequently remind us of the Brownie tales of Scotland, and some fragments of poetry which Dr. Rink gives, have quite an Ossianic ring about them. The best complete stories are much too long to permit of our extracting one here, though the following short one is a fair example:—

"The inlanders and the coast-people in the beginning were friends. A servant-maid called Navaranak used to be sent out by the inlanders to the coast-people in order to fetch back *matak* (edible whale-skin), and in exchange brought them reindeer-tallow; but after a time she grew weary of this work, and resolved to free herself by making them enemies. For this purpose she told the inlanders that the coast-people were going to attack them, and to the coasters she asserted that the inlanders were making ready to invade them. At length she provoked the inlanders to such a degree that they resolved upon attacking the coast-people. They chose a time when they were well aware that the men had all gone out hunting, and, accompanied by Navaranak, fell upon the helpless women and children. In their fright some of the mothers killed their own children, but one woman who was pregnant fled down beneath the ledge; and when Navaranak was sent back by the inlanders to find her out, she promised her all she possessed not to betray her. Some also escaped by hiding themselves among the rocks, but all the rest were killed. When the men returned, those who were left alive ran down and told them what had happened; and on coming up from the beach to their houses and beholding all their dead, the men were almost desperate. When the time came for flensing and cutting up the whale, Navaranak did not arrive as usual; she seemed to have disappeared altogether. When summer had again come round, the men prepared a great many arrows, and set out for the interior to take revenge on the inlanders. On their way they called out, as was their wont, "Navaranak, come on; we have got matak for thee!" but no one appeared. Again they went on a good distance, and then repeatedly called out, "Navaranak," &c. And this time she answered the summons, and went up to them. On noticing their arrows, she was about to take flight. Reassuring her, however, they told her she had no need to do that. When she had ventured quite close to them, they asked her where her countrymen were to be found, and she said, "Further away in the interior of the country;" but now they made her fast to a rope, and dragged her along with them until she perished. At length they arrived at a very large lake, where the tents of the inlanders were pitched all around, and they saw people going out and in. But they waited till all had entered the tents, and then they made their attack. Arrows came flying from both sides; but those of the inlanders soon grew fewer in number, and the coast-people remained all unwounded. When they had done with the men, they went inside, killing women and children; and having thus satisfied their revenge, returned to their homes.

There can be no doubt about the scientific value of this addition to our Arctic literature. To anyone who wishes to have a succinct and trustworthy account of all that is known of the Eskimo, we could not recommend a better work. The tales themselves are perfectly novel, and many of them quite interesting enough and full of queer adventure to become favourites with omnivorous boyhood and even dainty girlhood.

The illustrations, all things considered, are creditable to the native artists who drew and engraved them. By the kindness of the publishers we are able to reproduce a specimen.

#### OUR BOOK SHELF

*A Report on Trichinosis as observed in Dearborn Co. Ind., in 1874.* By George Sutton, M.D., Aurora, Ind. (Reprinted from the Transactions of the Indiana State Medical Society, 1875.)

THE literature of Trichinosis bids fair to become co-